PCoIP vs RDP – Which Is Better for Remote Desktop and Display?
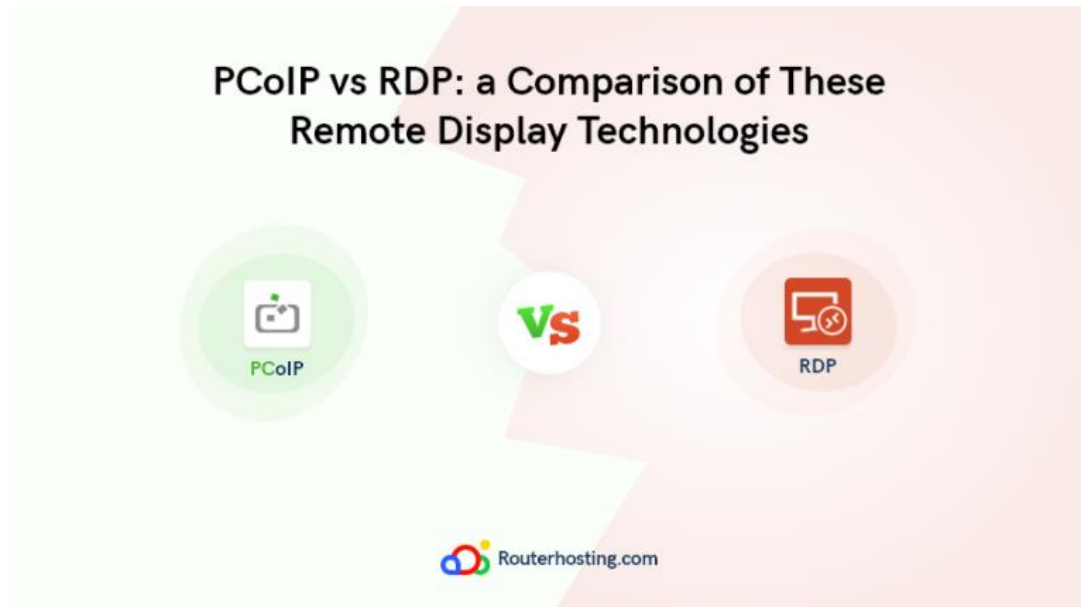

When we compare PCoIP vs RDP, both are remote desktop protocols used for technologies like virtual machines, virtual desktops, remote display, in VMware Blast Extreme, and in some other software such as Citrix.

But they have some differences in their speed, throughput, latency, and their overall performance. This article will discuss some of these differences.

An Introduction to PCoIP and RDP

Nowadays, connecting to a virtual machine in **VMWare** has multiple methods. You can do it through the VMWare workstation program, or use LogMeIn, TeamViewer, or other remote access software, or you can even do it manually.

You can also connect using a standard Remote Desktop (RDP) Connection through the operating system. Another way for connecting to a VM is by using **PCoIP**. Later, we will compare these two methods and will talk about their main differences. But first, let's start with their definitions:

What Is PCoIP?

PCoIP stands for **PC over IP**. It is one of the best remote connection protocols which provides adaptive technologies for the best user experience. PCoIP technology delivers a high definition and secure remote access experience.

It is also used for securing all the transferring data, revolutionizing the way data is secured in the workplace. Each PCoIP device such as zero-client, thin-client, smartphone, tablet, or laptop can be a secure end-point. Overall, PCoIP ensures that your sensitive information is protected.

PC over IP (PCoIP) was developed by [Teradici](#) as a **remote display** protocol in 2007. It uses the User Datagram Protocol (**UDP**) which is the alternative for Transmission Control Protocol (TCP). PCoIP initially was a hardware-based desktop virtualization product (such as a virtual desktop, or a remote display) which was designed around a Blade server.

But eventually, the software version of that was developed as well. VMware uses PCoIP for delivering a **virtual desktop**.

The PCoIP mechanism renders client desktops on a cloud server or network, compressing the desktop's display pixels, encrypting, and finally transmitting it to the client device.

Then, the client device will decrypt and render the desktop view for the user. This will be equipped with a proprietary chip that enables the user's PCoIP communication between the server and the client.

What Is RDP?

RDP is short for the **Remote Desktop Protocol**. It is a multi-channel protocol developed by Microsoft as part of its **Remote Desktop Services (RDS)** which many people use to access remote desktops. RDP is used by Remote Desktop Connection (**RDC**) for transmitting data.

In fact, RDP is a supported remote display protocol for those remote desktops which are using RDS hosts, physical machines, shared session desktops, and virtual machines. But VMware Blast display and PCoIP display protocols are supported for published applications.

[RDP software](#) is a VNC-based (Virtual Network Computing) application that leverages the Internet to allow the client to access the server, remotely.

The most basic functionality of an RDP software is transmitting the output (display) from the remote server to the client, and sending the client input (keyboard and mouse) to the remote server. In this remote desktop technology, the server listens on both TCP and UDP port 3389, by default.

What Is The Difference Between VDI And RDP

VDI and RDS are alternative desktop virtualization and remote desktop technologies. RDS uses Remote Desktop Protocol or RDP as its basis.

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Comparing PCoIP vs RDP

As we mentioned before, PCoIP and RDP have some differences in their key features. Some of the key features of PCoIP and RDP are:

- Using PCoIP and RDP as a VPN: both PCoIP and RDP protocols can be used in place of a company's Virtual Private Network, when a corporate firewall is not available or is deactivated.
- High Security and Encryption Level in Connections: using a corporate DMZ, the users can make secure and encrypted connections to Access Points or servers via either PCoIP or RDP.
- Types of Connections: PCoIP supports nearly all types of client devices.
- Security with AES: Both PCoIP and RDP support Advanced Encryption Standard 128-bit by default, adding an extra layer of security in connections. Although, you can change the encryption key cipher to AES-256 in PCoIP.
- Bandwidth Reduction: This capability is available on [PCoIP protocol](#) in order to optimize the bandwidth usage on WAN and LAN to increase its speed. Bandwidth will be evaluated by Remote Desktop Commander to track the RDP number which depends on your setting (color, depth, etc.).

- **Multiple Monitors:** PCoIP protocol can support up to 4 monitors with a resolution of up to 2560×2160 per display, or up to 3 monitors with a resolution of 4k (3840×1600) for Windows 7 remote desktop. On the other hand, the RDP monitor feature can support a single monitor on the Remote System and multiple monitors (up to 12) on the Local System.

- **Extra Supports:** Pivot display, Auto-fit, 32-bit color for virtual displays, ClearType fonts, Audio redirection with dynamic audio quality, Real-time Audio-Video for utilizing microphones and webcams, USB redirection for some users, MMR redirection for some operating systems like Windows or Remote Desktop OS (with Horizon Agent installed), and the option of Copy and Paste in plain text and images are supported by both protocols. RDP supports port redirection, printer redirection, file system redirection, and clipboard sharing as well.

Choosing the Best Display Protocol for You – PCoIP vs RDP

A display protocol is a key component that provides the end-user with a graphical interface. This interface allows the user to communicate with its client.

The established communication will be over a communication protocol, the display server protocol, or simply via a Network-Capable Application Processor (NCAP).

The Display Protocol may vary for some types of clients. You can choose between PCoIP, and **Blast Extreme** provided by **VMware**, or select **Microsoft RDP** (RD protocol).

PCoIP (PC over IP) provides an optimized desktop experience for the entire remote desktop environment including applications, video, audio, images, or for a published application on a WAN or LAN.

Moreover, PCoIP can compensate for a reduction in bandwidth or an increase in latency. All physical or virtual machines which contain shared session desktops on an RDS host, or Teradici host cards, can be used as remote desktops or published applications over PCoIP display protocol.

On the other hand, RDP is a remote desktop technology/protocol available for Windows, Linux, iOS, Mac, Android, and other operating systems.

Moreover, it can be used for serving virtual computers to users in the Azure cloud-computing solution. The communication in RDP is highly asymmetrical (Data flow comes more from the client to the server).

RDP also relies on additional protocols such as TPKT (ISO Transport Service on top of the TCP protocol) to enable the exchange of information units, T.125 MCS to enable multi-channel, and X.224 to set up a connection. But when it comes to security vulnerabilities, RDP has many known issues that are open for hackers to find and exploit.

"BlueKeep" attack in May 2019 was a worm-able vulnerability that allowed remote code execution, and self-propagation which could cause widespread problems, and Man-In-The-Middle attack which allows hackers to hijack and eavesdrop on sessions, are two examples of RDP's security shortcomings.

TeamViewer Vs RDP!

This article compares RDP with TeamViewer, to help you choose the right tool to remotely manage or access desktops on any device, from anywhere in the world.

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Summary

Whether you wish to use PCoIP or RDP, we recommend that you look to your requirements. If you wish to have a high quality, low bandwidth remote desktop, our suggestion is RDP. But if speed and the level of security matters to you, utilizing PCoIP is recommended.

Note: This is a PDF version of our web page, you can also read this article in the following address:

https://www.routerhosting.com/pcoip-vs-rdp-comparison/